General Specifications

GS 33Y05Q10-32E

Models SSS7700, SSS7710, SSS7711, SSS7720, SSS7750
Plant Resource Manager

PRM® R3
Plant Resource Manager

■ GENERAL

Plant Resource Manager (PRM®) is an asset management software tool for the digital network era. The PRM software manages field devices and maintenance work efficiently, and help reduce total cost of ownership (TCO) in an industrial plant.

These packages support intelligent devices such as FOUNDATION™ fieldbus, HART, PROFIBUS, and ISA100.11a field wireless devices as well as conventional analog devices.

■ PRODUCT OVERVIEW

Plant Resource Manager (PRM) consists of the following components:

● PRM Server

- Collects and stores maintenance related data such as device parameters, device alarms, and inspection memo in the field.
- Generates and manages centralized device information such as device lists, inspection schedules and records, user-created electronic documents, and parts lists.
- Generates maintenance alarms for field device maintenance with action guidance information (problem, cause, and action) and notifies these alarms to the people who need them.

● PRM Client

- Provides device navigator windows in hierarchy tree view for monitoring and managing devices.
- Performs automatic device recognition and registration (plug & play) by using full digital, bi-directional, field digital networks such as FOUNDATION fieldbus, HART, PROFIBUS, and ISA100.11a. Monitors device health status with maintenance alarms and communication errors. With PRM Advanced Diagnostic Function, PRM also performs device status diagnosis, device parameter setting using device diagnostic tools (i.e. DeviceViewer, DTM Works, DD menu).
- Displays status icons reflecting the communication and device status to let operators grasp the device status intuitively. A confirmation status icon appears for the devices with unacknowledged maintenance alarms (of the device health status).
- A status signal of a field device complying with NAMUR NE107 specifications is displayed on the Signal View of the Device Navigator. NE107 is a recommendation for self-monitoring and diagnosis of field devices published by NAMUR, an international user association of automation technology in process industries headquartered in Germany.
- Device icons to be displayed on the device navigator can freely be defined by a user. The user can customize those fonts and icons depending on the user requirements and the screen size.
- Maintenance marks are a kind of flags to be assigned to devices for setting and checking maintenance status. The maintenance mark icon is displayed upon setting, and enables to temporarily change device access level. The maintenance marks can also be linked with CENTUM's operation marks so that the maintenance engineers and operators can share the same information and coordinate their work.
- Performs online device adjustment/setting on screen using the same user interface with FieldMate versatile device management tool which is an on-site device adjustment/setting tool.
- Possible to exchange parameters and maintenance information between PRM and FieldMate.
- Provides PRM advanced diagnosis application, device diagnosis data historian, and general-purpose diagnosis tool for PRM advanced diagnosis function, in addition to the maintenance alarm function and device diagnostics function.
- Allows registering conventional analog field devices as well as field digital devices such as FOUNDATION fieldbus, HART, PROFIBUS, and ISA100.11a, for a true, centralized device management.
- Implements third-party calibration and diagnostic software tools as PLUG-IN applications. DeviceViewer (*1) and PLUG-IN ValveNavi are available from Yokogawa brand.
- Supports FDT/DTM (Field Device Tool/Device Type Manager) and EDDL (Electronic Device Description Language) technologies that enable PRM interfacing with field devices.

*1: DeviceViewer is a PLUG-IN application of the PRM Client for self-diagnosis of field digital devices such as FOUNDATION fieldbus and HART. A field device information and its status signal complying with NAMUR NE107 are displayed on the DeviceViewer. Download device definition files from each device vendor to run on the DeviceViewer prior to its use. DeviceViewer can be displayed on CENTUM VP/CS 3000 (R3.07 or later) HIS with operation and monitoring functions.

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GS 33Y05Q10-32E
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15th Edition May 28, 2014(YK)

Field Communications Server

This is a server to set and acquire field device data online. It implements data exchange between the field devices and the PRM Client or the PRM Server. Those data are distributed among maintenance support applications such as device status monitoring, device parameter tuning, and device diagnostics. PRM supports various types of field communication protocols (FOUNDATION fieldbus, HART, PROFIBUS, and ISA100.11a) and the following system configuration types are available.

Supported hardware

- FOUNDATION fieldbus Communication Modules for CENTUM VP/CS 3000
- AI/AO modules with HART communication for CENTUM VP/CS 3000
- PROFIBUS Communication Module for CENTUM VP/CS 3000
- FOUNDATION fieldbus Communication Modules for STARDOM
- AI/AO modules with HART communication for STARDOM
- PROFIBUS Communication Module for STARDOM
- AI/AO modules with HART communication for ProSafe-RS
- NI-FBUS card
- 3rd party HART multiplexers (Pepper and Fuchs, MTL, ELCON, and STAHL)
- 3rd party PROFIBUS communication devices (CommunicationDTM/GatewayDTM communications)
- Field Wireless Access Point and Field Wireless Management Station (CommunicationDTM/GatewayDTM communications)

Multiple Server Switchover

PRM manages CENTUM VP/CS 3000, ProSafe-RS, or STARDOM projects. It also provides an integrated monitoring for a large-scale project which is geographically distributed in remote locations. In case for the large-scale project where tens of thousands of field devices are installed, it is necessary to divide them into multiple numbers of PRM Servers. PRM's Multiple Server Function enables to select which PRM Server the PRM Client refers to. In this way, a single PRM Client is able to monitor several PRM Servers.

PRM Advanced Diagnosis Server Function (optional)

This sever function provides an environment for executing diagnostic algorithms by utilizing field device parameters.

The diagnostic algorithm application can be configured by using the PRM Advanced Diagnostic Software Development Kit (PAA-Development Kit) without any additional software program. By monitoring parameters and process data transmitted from field devices, the PRM Advanced Diagnosis Server Function configures and executes diagnosis of the devices and assets.

For details of the PRM Advanced Diagnosis Server Function, refer to general specifications of SSS7740 PRM Advanced Diagnosis Server (GS 33Y05Q21-32E).

PST Scheduler Package (optional)

PST(*1) stands for a partial stroke test. The PST Scheduler schedules PST, automatically executes PST in accordance with the schedule, and manages the results in unified manners. It is possible to modify the planned schedules and switch PST execution from automatic to manual.

For details of the PST Scheduler Package, refer to general specifications of SSS7780 PST Scheduler Package (GS 33Y05Q23-32E).

*1: By slightly operating emergency shutdown (ESD) valves online which are not activated under normal conditions, PST is to check if ESD valves function correctly in case of emergency. By using PST, the interval period between full stroke tests can be prolonged without disturbing the safety of the ESD valves, thus the maintenance cost for those ESD valves can be reduced.

Interface for Computerized Maintenance Management System (optional)

PRM has an interface with Maximo, a Computerized Maintenance Management System (CMMS), from IBM Software, Inc. It enables PRM to provide maintenance information to the maintenance management system online.

For details of the CMMS interface, refer to general specifications of SSS7730 Interface for CMMS (GS 33Y05Q20-32E).

Interface for GE Energy's System 1® (optional)

PRM is able to provide a single monitoring window for diagnosis of turbines, rotating equipment and reciprocating equipment under management by GE Energy's System 1 Optimization and Diagnostics Software Platform in addition to field devices such as pressure transmitters and flowmeters.

For details of System 1 integration, refer to general specifications of SSS7770 Interface for GE Energy's System 1 (GS 33Y05Q22-32E).

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■ SYSTEM CONFIGURATION

PRM manages a PRM Server as one unit. The PRM system can be configurable in scalable ways – a minimum system consists of a PRM Server, Field Communications Server and a PRM Client all resided in a single computer, and a large system with multiple clients. Examples of PRM system configurations are shown in this section.

● System configuration

CENTUM VP/CS 3000

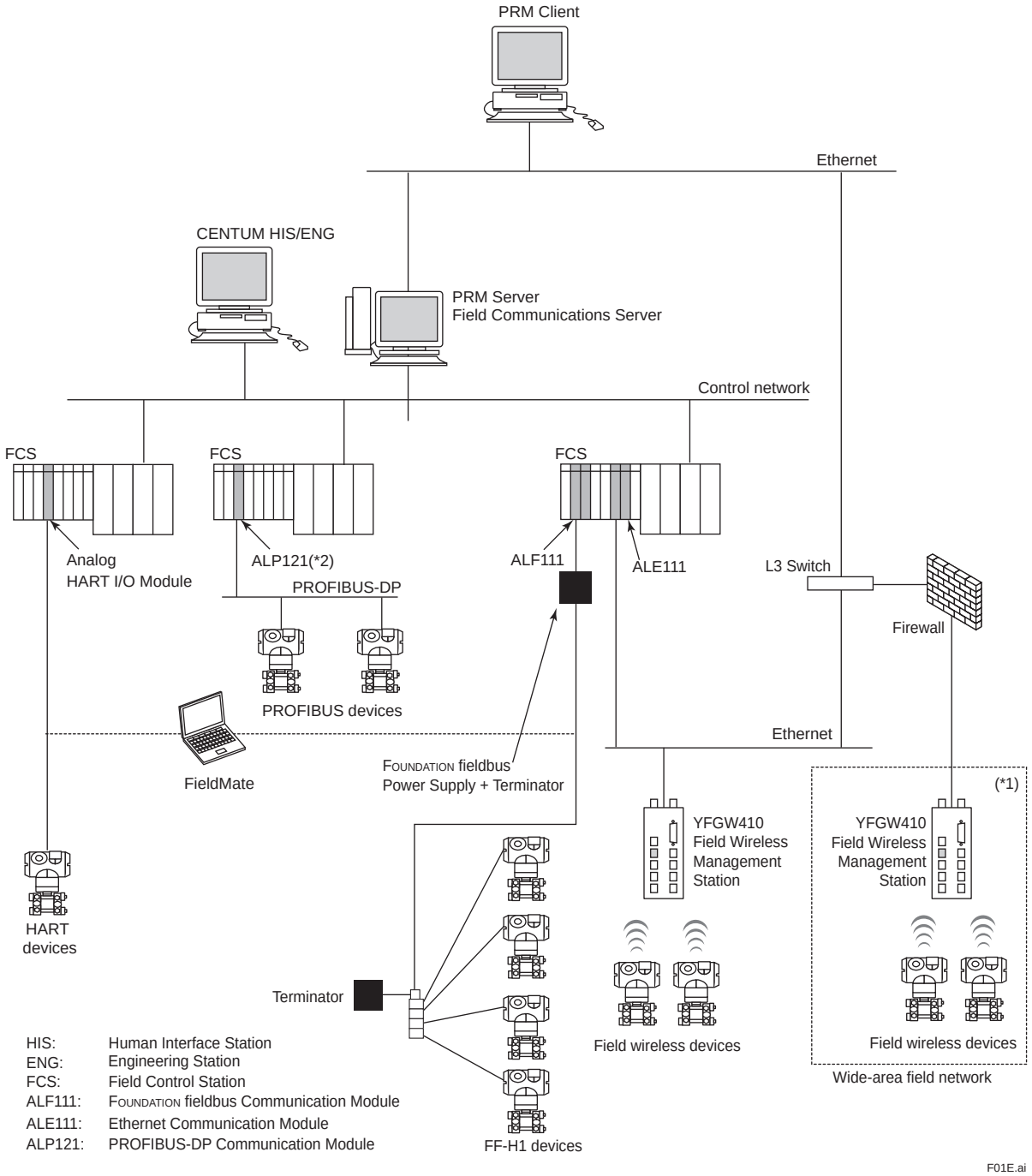


Figure: An example of CENTUM VP System Configuration

Note: A PRM Server, a PRM Client and a Field Communications Server can run on a single computer.
A PRM client can run on the same computer where HIS/ENG is already installed.
A PRM Server or a Field Communications Server cannot run on the same computer where HIS/ENG is already installed.

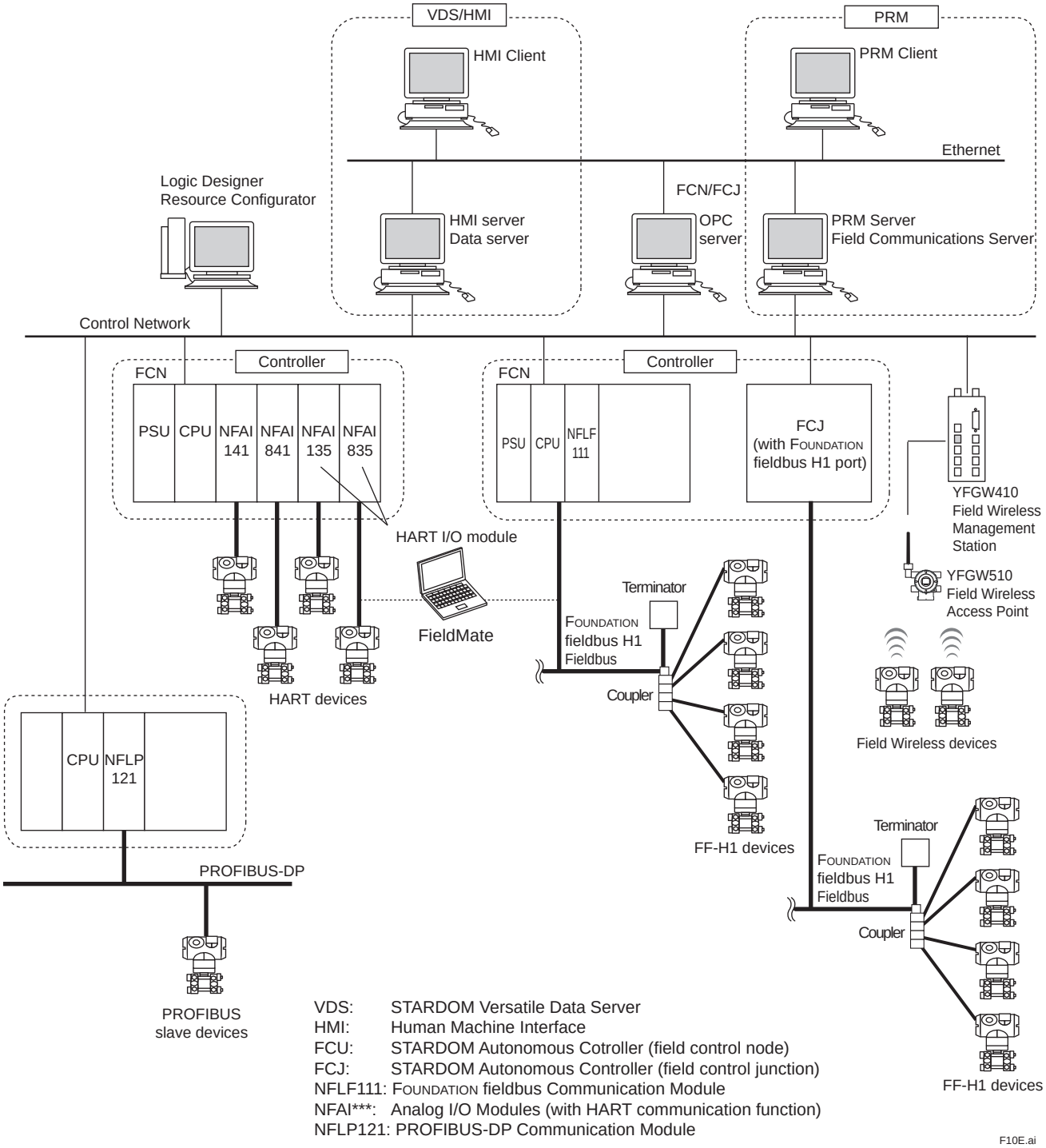
*1: Process data and diagnosis status can be displayed on HIS.
As for configuration of ISA100.11a field wireless, see GS 01W01A01-01EN “Field Wireless System Overview.”

*2: ALP121 is supported by CENTUM VP R5.02 or later revision.

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STARDOM

Messages from STARDOM controllers are transmitted to a PRM server via an OPC Server. FCN/FCJ OPC Server for Windows (a software package) is required.



VDS: STARDOM Versatile Data Server
HMI: Human Machine Interface
FCU: STARDOM Autonomous Cotroller (field control node)
FCJ: STARDOM Autonomous Controller (field control junction)
NFLF111: FOUNDATION fieldbus Communication Module
NFAI***: Analog I/O Modules (with HART communication function)
NFLP121: PROFIBUS-DP Communication Module

F10E.ai

Figure: STARDOM System Configuration

Note: A PRM Server, a PRM Client and a Field Communications Server can run on a single computer.
A PRM Client and an HMI client can run on the same computer.
A PRM Server or a Field Communications Server cannot run on the same computer where VDS is already installed.

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Notes for STARDOM configuration:

PRM packages cannot be installed on a computer where STARDOM Versatile Data Server (VDS) is already installed.

It is recommended to install FCN/FCJ OPC Server for Windows package on a different computer separately from PRM packages.

Refer to the below table for combination of the software revision numbers when installing FCN/FCJ OPC Server for Windows package on the same computer with PRM. Those combinations other than shown here, FCN/FCJ OPC Server for Windows must be installed on a different computer separately from PRM packages.

	FCN/FCJ OPC Server for Windows	PRM
Revision	R1.90	R3.02
	R2.20	R3.03, R3.04
	R3.01 to R3.10	R3.05
	–	R3.10
	R3.20 to R3.40	R3.11, R3.12

Up to 100 units of FCN/FCJ controllers can be connected to a Field Communications Server. As for a large-scale system, use multi-server function to divide the number of controllers connected to a PRM Server by the group of 100 units or less.

ProSafe-RS

PRM can manage HART field devices connected to ProSafe-RS's HART I/O analog modules.

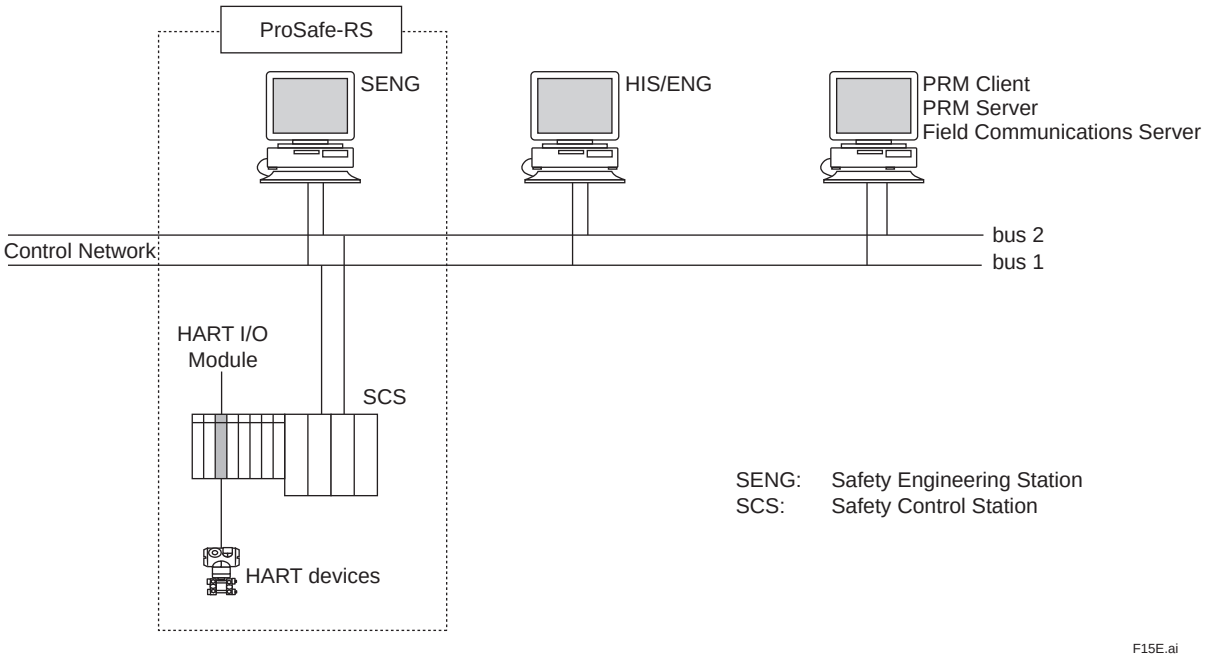


Figure ProSafe-RS System Configuration

Note: A PRM Client and SENG can run on the same computer.
A PRM Server or a Field Communications Server cannot run on the same computer where SENG is already installed.
Note: From Release R3.12 or later, PRM supports Vnet/IP-Upstream where the control bus's bandwidth is 2 Mbps or faster. As for details of the ProSafe-RS's Vnet/IP-Upstream network specifications, refer to GS 32Q01B30-31E ProSafe-RS Safety Instrumented System Overview (for Vnet/IP-Upstream).

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Communication with HART devices via Multiplexer
PRM can communicate with HART devices via HART multiplexer connected to the serial ports of the Field Communications Server.

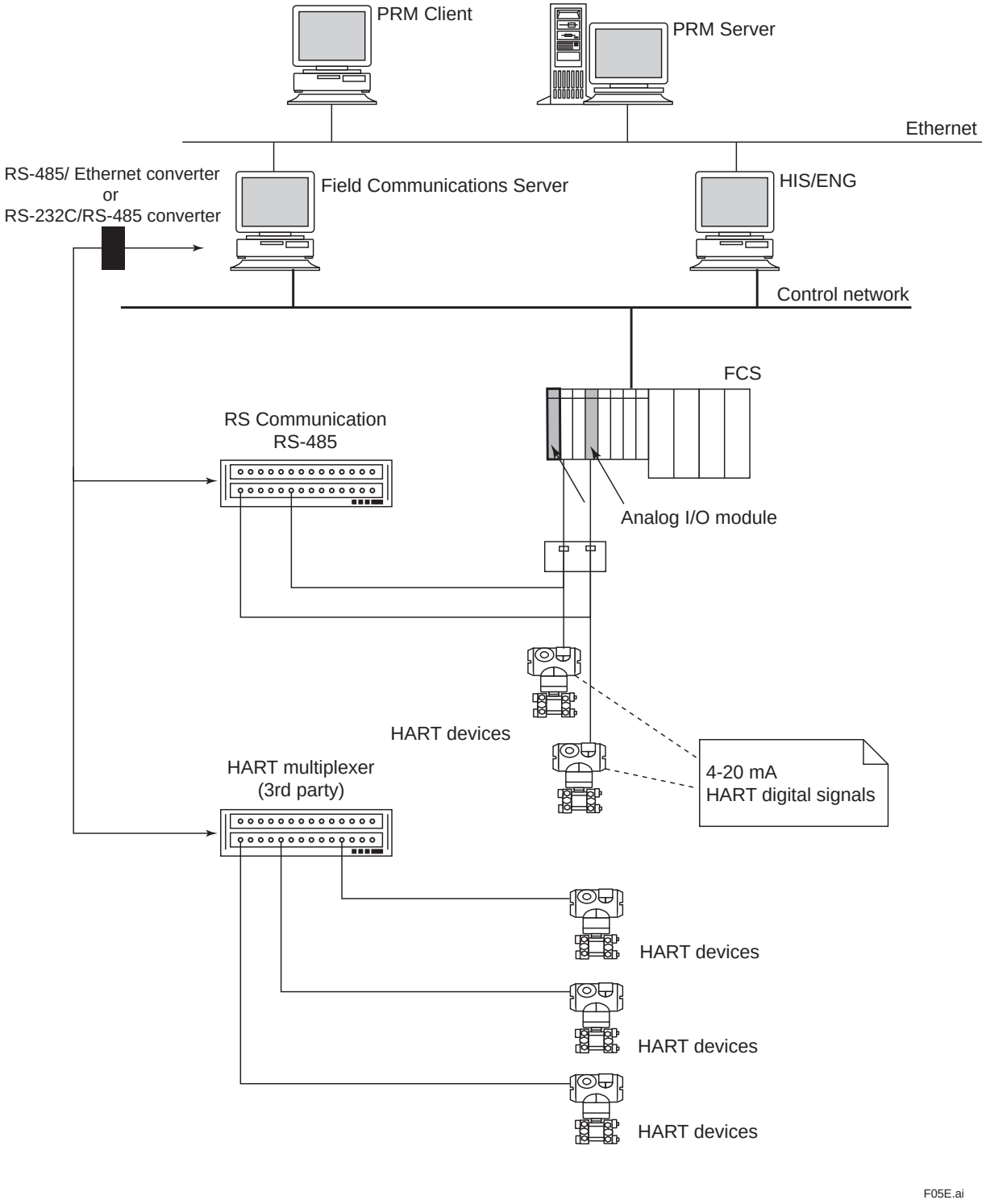


Figure Serial port connection via HART multiplexer (Parallel connection and two-way data flow)

Note: A PRM Server, a PRM Client and a Field Communications Server can run on a single computer.

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■ FUNCTIONAL SPECIFICATIONS

● Organization of Functions

The following figure shows organization of functions.

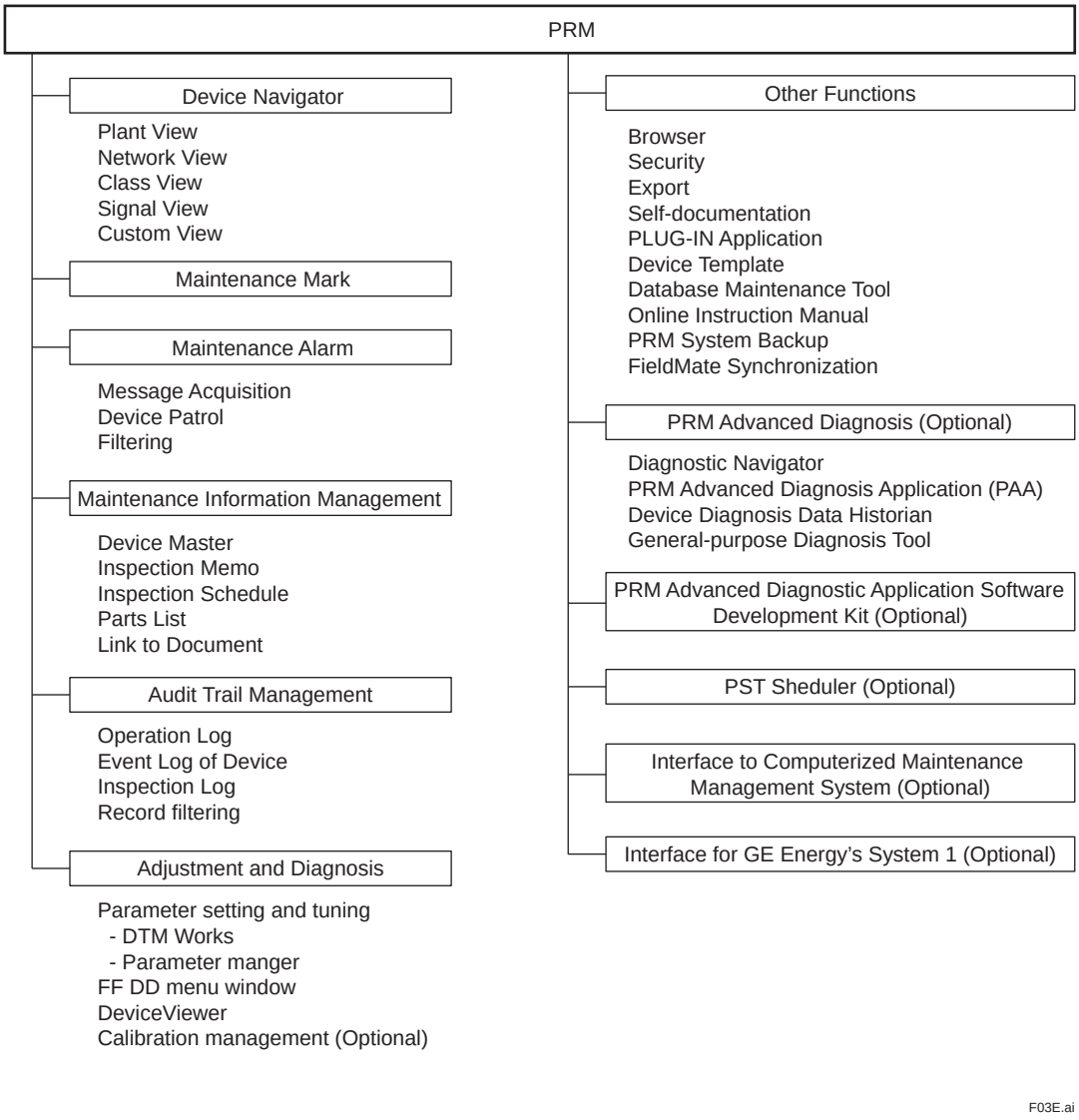


Figure: Organization of Functions

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Device Navigator

Provides four different views - plant view, network view, class view, signal view, and custom view.

Each view displays devices in a plant in the form of a plant hierarchy tree view, in the Windows explorer-like format. In these views, device status is shown with icons utilizing the maintenance alarm function so that operators are able to judge the status of the devices at a glance. Where there are devices with unacknowledged maintenance alarms, unacknowledged alarm icons are displayed.

User access can be restricted based on the device navigator hierarchy, which prevents unauthorized personnel from operating devices by mistake.

Plant view
Displays devices and equipment modules in the plant in hierarchy tree view according to the actual structure of the plant, or plant layer. Not-in-use devices can be allocated either to the “Spare” folder for spares and failed or in-service devices to the “Out Of Service” folder.

Network view
Displays the network hierarchy of devices connected to the field network in the tree view form.

Class view
Arranges devices in a tree view by vendors, models, and revisions. Users can identify the status of how spare devices are used while devices-in-use are failed or under maintenance. Device templates can be created using this function.

Signal view
Based on the device diagnosis result, the Signal view displays field devices which are either having operational problem or requiring maintenance on the list sorted by the status signals. It means that only the field devices that require maintenance can be shown on the list sorted by the category, which enables to maintain the field devices knowing the priority. Four kinds of status signals; which are Failure, Check Function, Out of Specification, and Maintenance Required; are provided based on NE107 recommended by NAMUR.

Custom view
User-created views can be created and displayed in the hierarchical structure. Devices can be categorized by the persons in charge of maintenance, by inspection or replacement schedule, operation or failure status, and so on.

Maintenance Mark

Assign maintenance mark to each device electronically to let maintenance engineers identify the status of a device. Enabled to link it with CENTUM’s operation marks so that maintenance engineers and operators can share the same information and coordinate their work.

Maintenance Alarm Function

This is a message system to notify maintenance information and guidance messages. It broadcasts information necessary for device maintenance to all the maintenance engineers. The information contains not only messages generated by the devices, but also attributes such as message information, phenomenon, causes, and actions. Alarms generated by diagnostic functions can also be delivered to the users.

Message acquisition
Acquires messages from field digital devices as well as event messages generated by CENTUM, STARDOM ProSafe-RS, and third-party systems. User-defined information such as event priorities, objective information, phenomenon, causes, and actions are automatically added to the original event messages. These are acknowledged as maintenance alarms, and passed on to the filtering function.

Device patrol
Acquires field device status provided by device’s self-diagnostics and generates maintenance alarms with the user-defined attributes such as message priorities, objective information, phenomenon, causes, and actions. These maintenance alarms are handed over to the filtering function. Data acquisition is done periodically or on demand. It also collects information from devices which do not generate alarm messages by themselves.

Filtering function
All the alarms generated by message acquisition, device patrol, advanced diagnostic application, and manually-entered messages are filtered and the results can be notified by each users.

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● Maintenance Information Management

PRM acts as the central database for device maintenance information.

Device master
Generates and manages a list of devices with all the relevant information. Users can display the list of all the devices or detailed information of the individual device. As for devices with field communication function, it is added to the device list automatically by plug & play upon recognition of the devices.

Inspection memo
Includes details of inspection, maintenance, or servicing tasks performed on a device or at a plant. Comments and remarks by maintenance engineers during servicing or maintenance can also be included as the service logs.

Inspection schedule
Manages schedule information such as inspection, adjustment, and calibrations by each device.

Parts list
Contains components and attribute information of parts that compose of a device. As for Yokogawa field devices with digital network communication function, dedicated templates are provided.

Document links
Manages device related documents such as plant structures (e.g. P & ID and control drawings), component spare parts list, online instruction manuals, and device images and enables users to access them by the device tag name as keys. These documents can be stored in a document server on an Ethernet and accessed by URL addresses.

● Audit Trail Management

Manages and displays historical records of PRM operations, inspection records, and event information generated by the maintenance alarm function on the PRM client. These historical records can be shown by chronological orders, device priority, or message priority. With filtering function, the records can be displayed by the device IDs or device tag names.

● Adjustment and Diagnostic Functions

Supports devices' adjustment and diagnostic functions online.

Parameter tuning and comparison
Sets and displays device parameter online. With this function, PRM compares the saved and the actual parameters. The parameter set values are saved as logs. The device data can be uploaded and stored to the database at any time. PRM also supports one-time uploading of all the connected devices.

Tools
- For FOUNDATION fieldbus communication
  It switches to DeviceViewer, DD menu, DTM Works, and PRM Advanced Diagnostic Function.

  DD menu: Using DD files provided by vendors, PRM implements device diagnostics and parameter tuning and setting, and calibrations. The specifications of the DD files are different by the field devices.

  DeviceViewer: A PLUG-IN application to display device self-diagnostic results. Most of the field devices hold self-diagnostic results as the vendor-specific parameters. DeviceViewer reads those self-diagnostic results and displays them in user-friendly ways. It also displays device information that is usually displayed on the LCD of the devices. This function enables users to remotely monitor the devices connected to PRM without viewing the local LCDs.
- For HART communication
  It switches to DeviceViewer, DTM Works, and PRM Advanced Diagnostic Function.

  DeviceViewer: Displays device status based on the self-diagnosis and setting status of the HART devices.

Calibration data management
PRM database manages and maintains device calibration data.

Calibration results, differences, and judgment (pass or fail) are registered to the database and displays them on a PRM client. The calibration data approval function allows only the authorized person to modify the calibration data once it is approved. The modification of the calibration data is recorded as an operation history by the historical operation management function.

When a documenting calibrator is used, the calibration data can be upload/download via communication. The calibration results are automatically saved into the database. The documenting calibrator connection is provided as optional.

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● Other Functions

Browser
Searches specific devices by the keywords of device attributes information such as device ID, device tag name, device tag comments, block name, and parameters.

Security
During the maintenance of field devices, this function allows only authorized personnel to access PRM or limiting the scope of work so as to prevent troubles caused by mis-operations to happen or secure system safety.

It asks a user to specify its user name so that the user can be traced back. The user names are recorded to the operation records. The user operations and its privileges are restricted by the user groups where they belong.

By using the device security function, it is possible to display field devices on the device navigator only for the specified user group.

Export
A device list (device ID, device tag name, device tag comments, etc.) registered to the PRM database can be exported as a text file in CSV file format. With this function, PRM's device information can be utilized by asset management software or others.

Self-documentation
Outputs the data stored in PRM database in a document format. This function enables to let users manage device-related information electronically and print out on demands. The information displayed on each window can also be printed out in a format to make it a maintenance report.

The following printing properties can be edited.

- Printing range
- Table of contents
- Header and/or footer
- Cover page

PLUG-IN applications
A PLUG-IN application is a third-party software program that runs with PRM. It runs on a PRM client computer and accesses to field devices and PRM database via PLUG-IN application library.

Supported PLUG-IN applications
- DeviceViewer
- PLUG-IN ValveNavi for YVP110 (Rev. 2.1 or later) (*1)
- Other third party PLUG-IN applications approved by Yokogawa.

*1: PLUG-IN ValveNavi is a software program for YVP110 valve positioner complied with FOUNDATION fieldbus to calibrate and execute advanced diagnostics using signature function such as device diagnosis. Its functions are equivalent to YVP20S, a stand-alone type ValveNavi. For more details of the ValveNavi functions, please refer to GS 21B04C50-01E YVP20S YVP Management Software.

Device template function
Provides templates which a user can define device information of its own. These templates help simplify engineering work of individual device settings.

Database maintenance tool
PRM's database size increases in accordance with the number of connected devices and over long period of operations. This is a tuning tool to archive, retrieve, delete and clean up the database to optimize the PRM database to be used efficiently. The data can also be automatically archived to an external storage media.

Online instruction manual
All the instruction manuals are provided in PDF format on a CD-ROM. Users are able to view and print the electronic instruction manuals on-demand.

PRM system back-up script
Enables users to back up and restore the conditions of the PRM system appropriate for the user environment such as registry information, PRM database, advanced diagnosis database and so on.

● Relevant Solution

Field asset KPI report
This is a solution tool for InsightSuite®AE service solutions aiming for monitoring, diagnosing, and optimizing customer's plant assets.

By using this tool, users are able to have a good understanding of the device conditions and prioritize maintenance activities by using condition-based maintenance approach which allows users to prepare a better maintenance workflow plan. For details, refer to GS 43D02S03-02EN for Field Asset KPI Report, and GS 43D02T03-02EN for InsightSuiteAE AE service & engineering.

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Supported Functions

PRM's supported functions differ by the kinds of field devices. The relationship between the field devices and their complied functions are shown as below.

Table Supported Functions

Function		Conventional Devices (*1)	FOUDATION fieldbus	HART (*2)	ISA100.11a (*3)	PROFIBUS (*4)
Device Navigation Function	Plant View	XX	XX	XX	XX	XX
	Network View	—	XX	XX	XX	XX
	Class View	XX	XX	XX	XX	XX
	Signal View	—	XX	XX	XX	XX
	Custom View	XX	XX	XX	XX	XX
Maintenance Mark		XX	XX	XX	XX	XX
Maintenance Information Management Functions	Device Master	XX	XX	XX	XX	XX
	Plug & Play	—	XX	XX	XX	XX
	Register from host file set	—	XX	X	—	X
	Inspection Memo	XX	XX	XX	XX	XX
	Inspection Schedule	XX	XX	XX	XX	XX
	Parts List	XX	XX	XX	XX	XX
	Link To Document	XX	XX	XX	XX	XX
Audit Trail Management Function	Parameter History	—	XX	XX	XX	XX
	Inspection Memo History	XX	XX	XX	XX	XX
	Operation History	XX	XX	XX	XX	XX
	Device Event Message	—	XX	XX	—	XX (*5)
Adjustment and Diagnosis	Parameter Tuning and Comparison	—	XX	XX	XX	XX
	Status Display	—	XX	XX	XX	XX
	Tool	—	XX	XX	—	—
	Calibration	—	XX	XX	—	—
Maintennance Alarm	Plant View	—	XX	XX	XX	XX
	Network View	—	XX	XX	XX	XX
	Class View	—	XX	XX	XX	XX
	Custom View	—	XX	XX	XX	XX
Other Functions	Browser	XX	XX	XX	XX	XX
	Security	XX	XX	XX	XX	XX
	Printing	XX	XX	XX	XX	XX
	PLUG-IN Application	—	XX	XX	—	—
	FieldMate Synchronization	XX	XX	XX	—	—

XX: Supported X: Partly supported —: Not applicable

*1: The conventional devices include 4 to 20 mA analog devices and static devices such as motors.
*2: HART 5, 6, and 7 are supported, but Wireless HART is not supported.
*3: Conforms to ISA 100.11a wireless system for industrial automation. (ISA = International Society of Automation)
*4: Condition monitoring with device navigator is available for PROFIBUS PA device which conforms to PA profile. To find out if the devices conform to PA profile, visit the PROFIBUS International web site or its device vendors.
*5: PROFIBUS device event message is acquired via ALP111 or ALP121 PROFIBUS-DP Communication Module.

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■ MULTIPLE SERVER SWITCHOVER

With this function, asset management of multiple plants can be integrated. A “server-set” concept has been introduced and enables a PRM Client to switch from a Field Communications Server and a PRM Server to other servers. A user has to define the server-set before use. With this function, a PRM Client manages all the device management information of the multiple plants at a single location.

PRM can be connected with CENTUM, STARDOM, or ProSafe-RS systems on the same Ethernet.

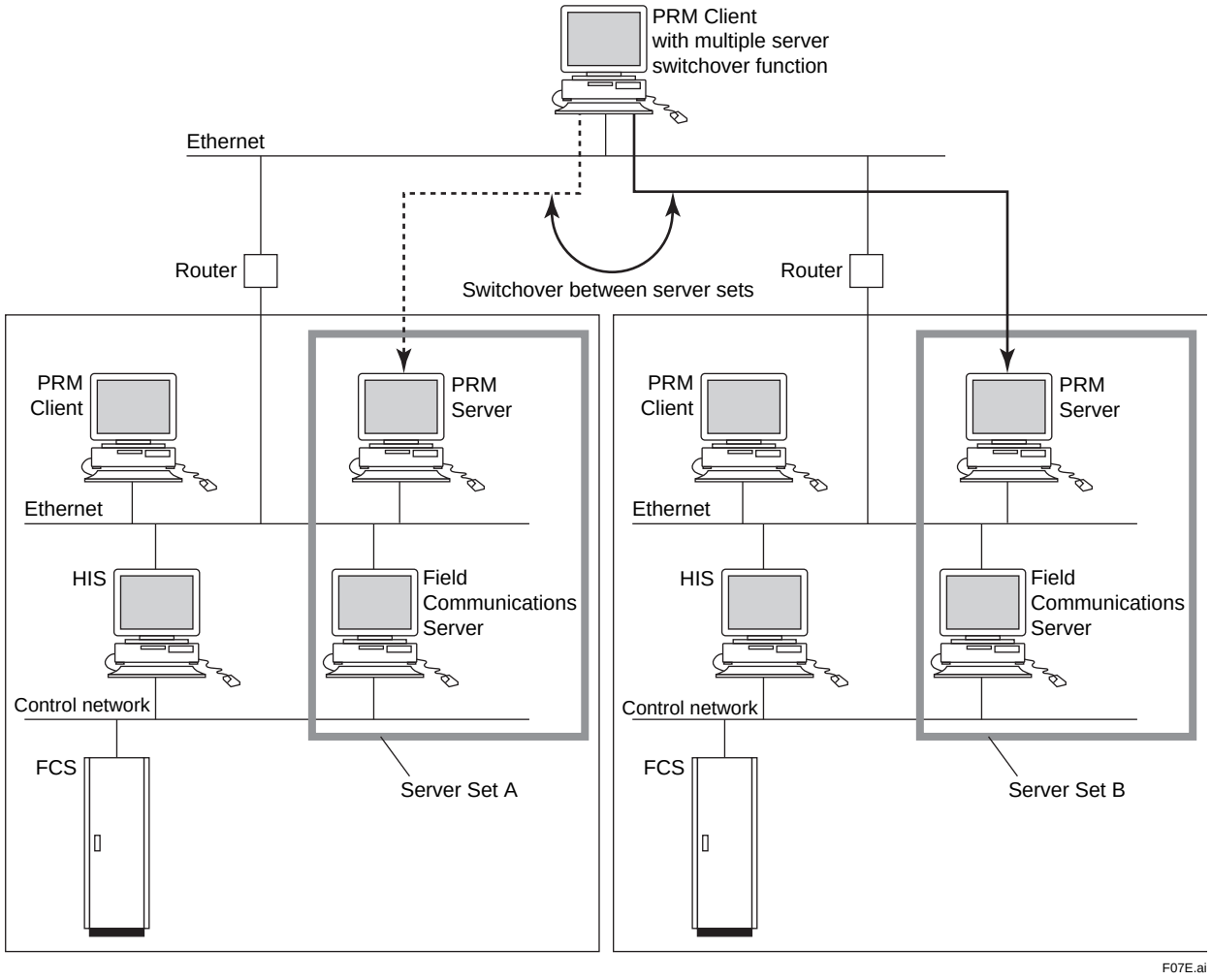


Figure: Multiple Server Switchover

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■ OPERATING ENVIRONMENT

● Hardware Requirements

The required main memory size and disk capacity depend on the number of registered devices. The minimum hardware requirement is described here when no more than 3000 devices are connected to a PRM Server. In case the system requires more than 3000 devices to be connected, please consult Yokogawa.

In case the size of the required main memory differs between the Windows OS and the PRM packages (PRM Server, PRM Client, and Field Communications Server), apply the higher of the two values.

Required Main Memory Size by Windows OS

The main memory sizes required by the applicable Windows OS are as described as below:

Table Required Main Memory Size by Windows OS

Memory Size / OS	Minimum Memory Requirement	Recommended (for better performance)
Windows Vista Business Edition	512 MB	1 GB
Windows Server 2008 Standard Edition **Windows Server 2008 R2 Standard Edition**	512 MB	2 GB
Windows 7 Professional Edition	2 GB	4 GB

PRM Server

CPU: Refer to the table below.
Main memory: Refer to the table below.
Hard disk space: Refer to the table below.
Other requirements: DVD-ROM drive
Ethernet card
Display resolution/colors: 256 colors or more

Table PRM Server Hardware Requirements (without Advanced Diagnosis Server)

	Number of Devices		
	300 units or less	**1000 units or less**	**3000 units or less**
CPU	Pentium - 1G Hz or higher (required)	Pentium - 1 GHz or higher (required) Pentium 4 - 2.8 GHz or higher (recommended)	Pentium 4 – 2.8 GHz or higher (required) Xeon Dual – 2.8 GHz or higher (recommended)
Main memory	512 MB or more (required) 2 GB or more (recommended)	512 MB or more (required) 2 GB or more (recommended)	1 GB or more (required) 2 GB or more (recommended)
Hard disk space (*1)	6 GB or more (required)	8 GB or more (required) Use of a high-speed disk drive such as SCSI or RAID drive is recommended.	13 GB or more (required) Use of a high-speed disk drive such as SCSI or RAID drive is recommended.
Device Database capacity (*2)	600 MB	2 GB	6 GB

*1: The minimum free space required is inclusive of the database capacity specified in (*2).
*2: Device database size covers the required size for one year. The size is calculated with the assumption that comparing and saving the parameters of all devices and function blocks with Parameter Manager for 5 times per year.

PRM Client

CPU: Pentium 1 GHz or higher
Main memory: 512 MB or more (required), 1 GB or more (recommended)
Hard disk space: 2 GB or more
Communication unit: Ethernet card
Peripheral devices: DVD-ROM drive
Display resolution/colors: 1024 x 768 or higher, 256 colors or more

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Field Communications Server

CPU: Pentium III 1 GHz or higher
In case of more than 2000 devices are connected, 2.8 GHz or higher is required.
Main memory: Refer to the table below.
Hard disk space: 1 GB or more
Communication unit: Refer to the table below.
Peripheral devices: DVD-ROM drive
Display resolution/colors: 256 colors or more

Table Hardware Requirements for Field Communications Server

	CENTUM VP/CS 3000 connection system ProSafe-RS connection system	STARDOM connection system	Simplified system for FOUNDATION fieldbus H1 device adjustment	Simplified system for HART device adjustment or system connected to HART multiplexer	commDTM/ gatewayDTM communication
Main memory (*1) (*2)	• FCS/SCS 1-16 units (100+80 x number of FCS/SCS) MB or more recommended	• FCN/FCJ 1-16 units (100+60 x number of FCN/FCJ) MB or more recommended	256 MB or more required 512 MB or more recommended	256 MB or more required 512 MB or more recommended	256 MB or more required {30+(commDTM/ gatewayDTM main memory)×(No. of node)}MB or more recommended
	• FCS/SCS 17-44 units (1380+10 x (number of FCS/ SCS-16)) MB or more recommended	• FCN/FCJ 17-100 units (1060+5 x (number of FCN/ FCJ-16) MB or more recommended			
Communication devices	Ethernet card Control bus interface card Control network interface card (VF702, VI702)	Ethernet card	Ethernet card FOUNDATION fieldbus H1 interface card	Ethernet card COM port	Ethernet Card

*1: The specified hardware requirements do not include the requirement for third party CommDTM/GatewayDTM. Refer to the respective DTM documentation.
*2: The total memory requirement should be calculated by summing the memory requirement for each required function and connected system.

All-in-one configuration (when all components – PRM Server, Field Communications Server, and PRM Client reside together in a single computer)

CPU: The maximum CPU capability among the capabilities required for the respective packages, or higher.
Main memory: Total sum of memory size required for the respective packages or the operating system (whichever is higher), or more.
Hard disk capacity: Total sum of available hard disk spaces required for the respective packages, in addition to a virtual memory area of approximately 1 GB.
Connectable number No. of stations: Maximum 24 of FCS/SCS or less. When the number of stations exceeds 25, install PRM server and field communications server on separate computers.
Display resolution/colors: 1024 x 768, 256 colors or more

OPC server (for STARDOM system)

CPU: Pentium 300 MHz or 400 MHz or faster recommended
Main memory: 256 MB or 512 MB or morerecommended
Disk capacity: There must be at least 1 GB of free space.
Ethernet card: 100BASE-TX, 10BASE-T, 10BASE-5

For STARDOM connection, two communication devices are required to segregate information and control networks.

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● Software Requirements

PRM Server, PRM Client, and Field Communications Server

	Windows XP Professional		Windows Server 2003		Windows Server 2003 R2		Windows Vista Business Edition		Windows 7 Professional	Windows Server 2008 Standard	Windows Server 2008 R2 Standard
	32-bit		32-bit		32-bit		32-bit		64-bit	32-bit	64-bit
	SP2	SP3	SP1	SP2	—	SP2	SP1	SP2	SP1	SP2	SP1
R3.01	X	N/A	X	N/A	X	N/A	N/A	N/A	N/A	N/A	N/A
R3.02	X	N/A	N/A	X	N/A	X	N/A	N/A	N/A	N/A	N/A
R3.03	N/A	X	N/A	X	N/A	X	X	N/A	N/A	N/A	N/A
R3.04	N/A	X	N/A	X	N/A	X	X	N/A	N/A	N/A	N/A
R3.05	N/A	X	N/A	X	N/A	X	X	X	N/A	X	N/A
R3.10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	X	X	X	X
R3.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	X	X	X	X
R3.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	X	X	X	X

SP: Service Pack
X: Applicable N/A: Not applicable

PRM Server
Internet Explorer 8.0 or 9.0

Microsoft SQL Server 2012 SP1 (32-bit) is used as a database software and is included in the software media for Plant Resource Manager.

PRM Client
Software for document: Adobe Reader X (10.1 and 10.2)

Field Communications Server
Driver: When PRM is connected with CENTUM VP/CS 3000 and/or ProSafe-RS, a control network driver is required. (*1)
For simplified system for FF-H1 dvice adjustment, FF-H1 fieldbus interface card driver is required.
And for communicating with devices via third-party gateway devices, third-party CommDTM/GatewayDTM are required (*2)

*1: The control network driver for Vnet/IP or V net and control network itnerface cards (VF702/VF701) are not required when communicating with HART devices via HART multiplexers and CommDTM/GatewayDTM.
*2: As for the third-party supplied CommDTM/GatewayDTM, please confirm the vendor for what OS is supported.

● Software Requirements for Connected System

CENTUM VP
CENTUM VP: R4.01 or later
R4.01 or later to support HART communication
R4.02.30 or later to support ISA100 Field Wireless communication
R4.03.00 or later to support Fast Device Patrol for HART

For conecting with CENTUM VP, Exaopc OPC Interface Package (for HIS) R4.01 or Exaopc OPC Interface Package (NTPF100) R3.50 or later are required.

CENTUM CS 3000
CS 3000: R3.01 or later
R3.02 or later to support HART devices
R3.07 or later to notify HIS of operator guide message
R3.08 or later for Consolidated Alarm Management Software for HIS (CAMS for HIS) consolidation

As for CENTUM CS 3000, Eaxopc OPC Interface Package (for HIS) R3.01 or Exaopc OPC Interaface Package (NTPF100) R3.01 or later are required. As for HART device support, Exaopc OPC Interface Package (for HIS) R3.02 or later is required.

ProSafe-RS
ProSafe-RS: R1.02 or later
R2.20 or later to support HART communication

As for ProSafe-RS, Eaxopc OPC Interface Package (for HIS) needs to be R3.06 or later; R3.07 or later to notify HIS of operator guide message; and R3.08 or later for CAMS for HIS consolidation. Or, use Exaopc OPC Interface Package (NTPF100) R3.01 or later.

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Exaopc OPC Interface Packages required for connecting PRM with CENTUM systems

Purpose	Exaopc OPC Interface Package (for HIS) (Model: LHS2411)	Exaopc OPC Interface Package (Model: NTPF100)
PRM to acquire alarm messages from CENTUM HIS	X	X
PRM to notify operator guide messages to CENTUM HIS	X	N/A
PRM to synchronize the maintenance marks with CENTUM operation marks	X	N/A

X: Available N/A: Not available

STARDOM

STARDOM: R1.40 or later
R1.60 or later to support HART devices
FCN/FCJ OPC Server for Windows: R1.40 or later
R1.60 or later to support HART devices

FieldMate

PRM: R3.02 or later to support synchronization with FieldMate.
FieldMate: R1.03.01 or later to support synchronization with PRM.

■ YOKOGAWA PRODUCTS AVAILABLE TO RESIDE WITH PRM ON THE SAME COMPUTER

● PRM Client

CENTUM VP HIS
CENTUM CS 3000/HIS
ProSafe-RS SENG
STARDOM HMI Client Computer

■ MODELS AND SUFFIX CODES

PRM Basic Set (for new installation)

		Description
Model	PRMSET	Plant resource manager basic set
Suffix Codes	-S	Basic software license and media fee
	1	Always 1
	1	English version
Option Codes	/N0025	Maximum number of connected devices: 25
	/N0300	Maximum number of connected devices: 300
	/N1000	Maximum number of connected devices: 1000
	/N3000	Maximum number of connected devices: 3000

Note: The basic set includes licenses of a PRM client, a PRM server, and a field communications server; a software media for PRM; a device files media; and an electronic installation manual media.

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PRM Server (for new installation)

		Description
Model	SSS7700	Plant Resource Manager (server) [Media model: SSSSM02-C11]
Suffix Codes	-S	Basic software license
	-C	Multiple software licenses (for 2 or more)
	1	Always 1
	1	English version
Option Codes	/N0300	Maximum Number of connected devices: 300
	/N1000	Maximum Number of connected devices: 1000
	/N3000	Maximum Number of connected devices: 3000

Note: Every project requires one PRM server.
Note: This package cannot be installed with CENTUM VP/CS 3000 HIS/ENG, ProSafe-RS SENG, or STARDOM HMI client computer.
Note: This package can reside on a single computer where a PRM Client and a Field Communications Server run.
Note: Exaopc OPC interface package for HIS (LHS2411) is required to acquire device alarms and events.

PRM Server (for expansion)

		Description
Model	SSS7700	Plant Resource Manager (server) [Media model: SSSSM02-C11]
Suffix Codes	-A	Software license for additional devices
	1	Always 1
	1	English version
Option Codes	/N0003	Expand maximum number of connected devices: 25 to 300
	/N0010	Expand maximum number of connected devices: 25 to 1000
	/N0310	Expand maximum number of connected devices: 300 to 1000
	/N0030	Expand maximum number of connected devices: 25 to 3000
	/N0330	Expand maximum number of connected devices: 300 to 3000
	/T01	Add 1000 units of connected devices
	/T02	Add 2000 units of connected devices

Note: Option codes of /T01 and /T02 are applicable to the PRM server license for 1000 devices only and the total number of connected devices should not exceed 3000 devices with this option.

PRM Client

		Description
Model	SSS7710	Plant Resource Manager (client) [Media model: SSSSM02-C11]
Suffix Codes	-S	Basic software license
	-C	Multiple software licenses (for 2 or more)
	1	Always 1
	1	English version

Note: This package can be installed with CENTUM VP/CS 3000 HIS/ENG, ProSafe-RS SENG, or STARDOM HMI client computer.
Note: This package can reside on a single computer where a PRM Server and a Field Communications Server run. In this case; however, this package cannot be installed on the same computer where CENTUM VP/CS 3000's HIS/ENG, ProSafe-RS's SENG, and/or STARDOM's HIM client reside.

Field Communications Server

		Description
Model	SSS7720	Field Communications Server [Media model: SSSSM02-C11]
Suffix Codes	-S	Basic software license
	-C	Multiple software licenses (for 2 or more)
	1	Always 1
	1	English version

Note: The functions to communicate with devices for FOUNDATION fieldbus, HART, PROFIBUS, and ISA100.11a are included in the basic specifications.
Note: This package cannot be installed with CENTUM VP/CS 3000 HIS/ENG, ProSafe-RS SENG, or STARDOM HMI client computer.
Note: This package can reside on a single computer where a PRM Server and a PRM Client run.

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Documenting Calibrator Interface for PRM Client

		Description
Model	SSS7711	Documenting Calibrator Interface [Media model: SSSSM02-C11]
Suffix Codes	-S	Basic software license
	1	Always 1
	1	English version
Option Code	/FLK01	For Fluke 743B/744/754

Note: With the basic license, this software package can be installed in two or more PRM client computer.

Software Media for Plant Resource Manager

		Description
Model	SSSSM02	Software media for Plant Resource Manager
Suffix Codes	-C	Supplied media: DVD-ROM
	1	Always 1
	1	English version

Note: The electronic instruction manual for this package is included in the media model SSSSD02.

Device Files Media

		Description
Model	SSSSM03	Device files media
Suffix Codes	-C	Supplied media: DVD-ROM
	1	Always 1
	1	English version

Note: This media contains DD and DTM for field devices.
Note: When upgrading the PRM software revision, please use the latest version of software Media for PRM and DeviceFiles Media.

Electronic Instruction Manual Media for PRM

		Description
Model	SSSSD02	Electronic instruction manual media for Plant Resource Manager
Suffix Codes	-C	Supplied media: CD-ROM
	1	Always 1
	1	English version

Note: The PRM software media (SSSSM02) is required to use this media.
Note: No license is required to use the electronic instruction manual media.

PLUG-IN ValveNavi

		Description
Model	SSS7750	PLUG-IN ValveNavi [Media model: SSSAM02-C11]
Suffix Codes	-S	Basic software license
	-C	Multiple software license (for 2 or more)
	1	Always 1
	1	English version
Option Code	/FF-H1	For FOUNDATION fieldbus devices (*1)

Note: This package runs on a computer installed with PRM Client (SSS7710).
Note: This software supports FOUNDATION fieldbus devices.
*1: To connect with FOUNDATION fieldbus devices, specify the option code of "/FF-H1."

Software media for PLUG-IN ValveNavi

		Description
Model	SSSAM02	PLUG-IN application media for Plant Resource Manager
Suffix Codes	-C	Supplied media: CD-ROM
	1	Always 1
	1	English version

Note: Electronic instruction manual for PLUG-IN ValveNavi is included in this software media.

FCN/FCJ OPC Server for Windows

For more information, refer to GS 34P02Q61-01E.

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■ SOFTWARE LICENSE VERSION UPGRADE FROM R2 TO R3

This section is dedicated for the PRM R2 users who wish to upgrade to R3 for the benefit of using new functions that are only available from R3. Purchase every upgrading R3 license that match with the existing R2 (basic and multiple licenses). Specify the same number of connected devices as R2.

PRM server for upgrading from R2 to R3

		Description
Model	SSS7700RU	Plant Resource Manager (server) upgrade [Media model: SSSSM02-C11]
Suffix Codes	-S	Basic software license
	-C	Multiple software license (for 2 or more)
	1	Always 1
	1	English version
Option Codes	/N0300	Maximum number of connected devices: 300
	/N1000	Maximum number of connected devices: 1000
	/N3000	Maximum number of connected devices: 3000

Note: The option code of "/N0100" in R2.10 or earlier for maximum number of connected devices 100 units has been expanded to 300 units in R3. Specify "/N0300" in place of "/N0100."

Note: PRM R3.12 requires Microsoft SQL Server 2012 which does not support Windows 2000/XP/2003. There are two ways to cope with PRM R2 operating on Windows 2000/XP/2003. One is to newly install R3.12. The other is to upgrade to R3.04 first, replace OS to the new one, then install R3.12. In the latter case, the device files and other database can be saved.

PRM client for upgrading from R2 to R3

		Description
Model	SSS7710RU	Plant Resource Manager (client) upgrade [Media model: SSSSM02-C11]
Suffix Codes	-S	Basic software license
	-C	Multiple software license (for 2 or more)
	1	Always 1
	1	English version

Field communications server for upgrading from R2 to R3

		Description
Model	SSS7720RU	Field Communications Server upgrade [Media model: SSSSM02-C11]
Suffix Codes	-S	Basic software license
	-C	Multiple software license (for 2 or more)
	1	Always 1
	1	English version

Note: Communication with HART devices is included as a standard function from R3, and there is no need to specify "/HART" option code which was necessary for R2.

Documenting calibrator interface for upgrading from R2 to R3

		Description
Model	SSS7711RU	Documenting Calibrator Interface upgrade [Media model: SSSSM02-C11]
Suffix Codes	-S	Basic software license
	1	Always 1
	1	English version
Option Codes	/FLK01	For Fluke 743B/744/754

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PRM basic set for upgrading from R2 to R3

		Description
Model	PRMSETRU	Plant Resource Manager basic set upgrade
Suffix Codes	-S	Basic software license includes upgrades and media fees
	1	Always 1
	1	English version
Option Codes	/N0025	Number of connected device: 25 units or less
	/N0300	Number of connected device: 300 units or less
	/N1000	Number of connected device: 1000 units or less
	/N3000	Number of connected device: 3000 units or less

Note: PRM basic set for upgrading can only be purchased when a user has R2 PRMSET. Specify the number of connecting devices as the same as the existing one.
Note: The basic set includes a PRM server, a PRM client, a field communications server, a software media for PRM, and an electronic instruction manual media.
Note: The option code of "/N0100" in R2.10 or earlier for maximum number of connected devices 100 units has been expanded to 300 units in R3. Specify "/N0300" in place of "/N0100."

■ ORDERING INFORMATION

Specify model and suffix codes.

■ TRADEMARKS

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